

What is claimed is:

1. A backlight device, comprising:
a plurality of point light sources positioned on a
base plate; and
a light guide plate having a first surface and a
5 second surface parallel to the first surface,
wherein the first surface has a plurality of
convex structures corresponding to the point
light sources, and a recess is formed therein.
2. The backlight device accordind to claim 1,
10 wherein the recess is an arc-shaped recess.
3. The backlight device as claimed backlight
device accordind to claim 1, wherein the plurality of
point light sources are light emitting diodes.
4. The backlight device as claimed backlight device
15 accordind to claim 1, wherein the convex structure is
formed in a flat frustum shape or truncated cone shape.
5. The backlight device accordind to claim 1,
wherein the convex structure has a proximal end portion
and a distal end portion, wherein the cross section of
20 the proximal end portion and the cross section of the
distal end portion are circular, and the section of the
distal end portion is smaller than the proximal end
portion.

6. The backlight device accordind to claim 1,
wherein the convex structure has a proximal end portion
and a distal end portion, wherein the cross section of
the proximal end portion is hexagonal, the cross section
5 of the distal end portion is circular, and the section of
the distal end portion is smaller than the proximal end
portion.

7. The backlight device accordind to claim 1,
further comprising:
10 a diffusion film disposed on the first surface of
the light guide plate.

8. The backlight device accordind to claim 1,
further comprising a light guide pattern formed on the
second surface of the light guide plate, wherein the
15 light guide pattern is jagged or uneven.

9. The backlight device accordind to claim 1,
wherein the material of the light guide plate is selected
from: polymethylmethacrylate(PMMA), polycarbonate (PC)
and the combination thereof.

20 10. A liquid crystal display device, comprising:
a plurality of point light sources positioned on a
base plate;
a light guide plate having a first surface and a
second surface parallel to the first surface,
25 wherein the first surface has a plurality of
convex structures corresponding to the point
light sources, wherein a recess formed therein;

a diffusion film disposed on the first surface of
the light guide plate; and
an LCD panel disposed on the diffusion film.

11. The backlight device accordind to claim 10,
5 wherein the recess is an arc-shaped recess.

12. The backlight device accordind to claim 10,
wherein the plurality of point light sources are light
emitting diodes.

13. The backlight device accordind to claim 10,
10 wherein the convex structure is formed in a flat frustum
shape or truncated cone shape.

14. The backlight device accordind to claim 10,
wherein the convex structure has a proximal end portion
and a distal end portion, wherein the cross section of
15 the proximal end portion and the cross section of the
distal end portion are circular, and the section of the
distal end portion is smaller than the proximal end
portion.

15. The backlight device accordind to claim 10,
20 wherein the convex structure has a proximal end portion
and a distal end portion, wherein the cross section of
the proximal end portion is hexagonal, the cross section
of the distal end portion is circular, and the section of
the distal end portion is smaller than the proximal end
25 portion.

16. The backlight device accordind to claim 10, further comprising a light guide pattern formed on the second surface of the light guide plate, wherein the light guidie pattern is jagged or uneven.

5 17. The backlight device accordind to claim 10, wherein the material of the light guide plate is selected from: polymethylmethacrylate(PMMA), polycarbonate (PC) and the combination thereof.

18. A light guide plate, comprising:
10 a first surface and a second surface parallel to the first surface, wherein the first surface has a plurality of convex structures, and a recess is formed therein.

19. The light guide plate accordind to claim 18,
15 further comprising a plurality of light sources formed below the first surface, and every light source is emitted to a corresponding convex structure, wherein the plurality of point light sources are light emitting diodes.

20 20. The light guide plate accordind to claim 18, wherein the recess is an arc-shaped recess.

21. The light guide plate accordind to claim 18, wherein the convex structure is formed in a flat frustum shape or a truncated cone shape.

22. The light guide plate accordind to claim 18,
wherein the convex structure has a proximal end portion
and a distal end portion, wherein the cross section of
the proximal end portion and the cross section of the
5 distal end portion are circular, and the section of the
distal end portion is smaller than the proximal end
portion.

23. The light guide plate accordind to claim 18,
wherein the convex structure has a proximal end portion
10 and a distal end portion, wherein the cross section of
the proximal end portion is hexagonal, the cross section
of the distal end portion is circular, and the section of
the distal end portion is smaller than the proximal end
portion.

15 24. The light guide plate accordind to claim 18,
further comprising:

a diffusion film disposed on the first surface of
the light guide plate.

25. The light guide plate accordind to claim 18,
20 wherein the material of the light guide plate is selected
from: polymethylmethacrylate(PMMA) ,polycarbonate (PC)
and the combination thereof.

26. The light guide plate accordind to claim 18,
further comprising a light guide pattern formed on the
25 second surface of the light guide plate, wherein the
light guide pattern is jagged or uneven.